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THE EXTENSION POULTRY HUSBANDMAN

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A FORWARD-LOOKING PROGRAM FOR 4-H MEMBERS*

By
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Associate Professor of Poultry Extension,
New Jersey Agricultural Extension Service.

Program building for 4-H clubs by specialists results in programs, the objects of which stress subject matter, such as increased egg production, value of purebred stock, low mortality, egg quality, and so forth. The specialist, in planning the program, thinks in terms of improved production practices. It is his thought to teach the club members the improved practices and through the club members demonstrate the value of such practices to the community.

The following objectives of 4-H poultry clubs were taken at random from extension bulletins or circulars:

1. "The object of the first-year poultry club work is to organize boys and girls into groups for the purpose of introducing purebred poultry from high producing strains, to demonstrate proper methods of hatching and rearing chicks, and to train members in leadership."
2. "The chick-rearing project has for its aim the teaching of boys and girls how to grow healthy, well-developed stock."
3. "To demonstrate better poultry practices to the people of a community by teaching boys and girls practical methods of poultry management."
4. "The primary purpose is to teach boys and girls, and through them, demonstrate to the community improved practices in agriculture."

Turning from the objectives of club programs, as written by specialists, to the objectives of 4-H club work as prepared by State leaders, we find a much broader objective. The first is from a 4-H handbook: "Rural boys and girls are taught the better agricultural and home economic practices and the finer and more significant things of rural life." The second is from a club bulletin: "The wise direction of boys and girls in our rural life consists not alone in training them in the technique of farm and home tasks, but also in giving them basic information upon which the success of their lives depends."

This last objective of 4-H club work, I feel, definitely shows a trend away from the specialists' point of view to a broader one, namely, that of education of the individual. Is this not the ultimate aim or true objective of all 4-H club work and the objectives listed by specialists? means to an end, steps on the way to the development of the individual?

*Presented at Conference of Poultry Specialists, Boston, Mass.,
April, 1936.

Accepting the broader objective of club work, our programs of the future should consider the seven principles of education as set up by the Committee on Secondary Education which are: (1) Health; (2) command of fundamental processes; (3) worthy home membership; (4) vocations; (5) citizenship; (6) worthy use of leisure time; (7) ethical character.

I do not believe it will be difficult for our poultry programs to meet these seven principles of education:

1. Principles of sanitation and the importance of their application in poultry, provides a splendid opportunity of teaching principles of health.
2. The need of constructive thinking and solving of problems in poultry work will aid in developing the fundamental processes.
3. The close relationship of the poultry project to the parents and home will promote worthy home membership.
4. Successful completion of poultry projects can be a factor in determining vocation.
5. Group action in club work promotes training in citizenship.
6. Poultry is well adapted for leisure time and the many club activities provide a wise use of leisure time.
7. Ethical character will be developed by close association with club agents and other extension workers.

To meet these principles, poultry-club programs must be flexible. Programs of today are too rigid. They are planned to demonstrate improved practices or to change practices. The poultry-club program should be planned to:

1. Meet the immediate needs and abilities of the club members.
2. Meet the needs of the community.
3. Be adapted to various age groups.

The planning of a program to meet the three conditions requires careful thought and much planning for its successful completion. In addition to the general conditions, there are other factors that complicate the building of a program. The length of time club members have been in club work presents a problem. One club may be all first-year members, while another has members who have been in club work for two, three, and four years. How can the program be built to hold the interest of the older members and not be too far advanced for the first-year members? Another point is the length of time the members

are exposed to your influence. This is generally shown in poultry club meetings, which are held once a month and then for only twenty to thirty minutes. How much can be given in this period of time in the way of subject matter? To me these are a few of the complicating factors in present day program building.

No doubt there are several methods of approach to the development of a subject-matter program to meet the various conditions mentioned. I will confine my remarks to the plan under consideration for a subject-matter program for poultry clubs in New Jersey. I wish to emphasize that the ultimate aim or objective of the program is the education of the individual and the subject matter is the stepping stone toward the accomplishment of the objective.

The program is divided on a yearly basis and covers a three-year period. The subject-matter material of the first year plans to teach the "how." Such subjects as brooding chicks, feeding laying hens, and constructing poultry-houses would be given the first year.

The second year, the subject matter would continue to teach the "how" but in addition would be including the "why." For example, to continue the "how" such subjects as selection of layers, preparation of poultry for market and production of quality eggs could be included. The "why" part of the program in the second year would be an explanation of the first year. Such subjects as principles of feeding and poultry-farm sanitation would teach the "why" of the first year. The third or additional years would continue on the same basis as the first and second years. The division of the program on a yearly basis would meet the following problems of program building:

1. Varying ages of individual members in the same club.
2. The immediate needs and abilities of club members.
3. The limited teaching time available.
4. The needs of the community.

In meeting problem number one, the program meets the condition by providing simple instruction for first-year members and more advanced or new material for older members. Such a program would provide interest for the young men who feel they have grown out of club work.

The flexibility of the program meets problem two, the immediate needs and abilities of individual members. For example, if club member John Jones is interested and has mechanical ability, the program could provide material on the mechanics of artificial lights which would hold John's interest. On the other hand, club member Charles Smith, in the same club, lacks such ability, but is advanced in sketching. The program could provide abundance of material on breeds and varieties of poultry to assist Charles with his sketching and thus maintain his interest.

The program is particularly adapted to the third problem, the limited teaching time available. The length and number of subjects given in any one year would be governed by the time available.

The fourth problem, needs of the community, is met by such a program in that its flexibility allows for changes in the program to meet the needs in the community. For example, the needs of a community may be diversity of income from agricultural sources and capon production may be the solution. The program could be utilized for demonstration of the possibilities of capon production to meet the needs of the community.

In the preparation of the subject-matter material to accompany such a program, thought must be given to the following factors: age, needs, and abilities of club members. The adaptability of the subject to home conditions and presentation at meetings should also be considered. To illustrate this point of the program, take the subject of brooding chicks. This subject would be broken down into units for home practice covering the following methods of breeding: Unit 1- natural brooding; unit 2- colony brooding; unit 3- electric brooding; unit 4- confinement brooding.

These four units under brooding chicks would meet most of the conditions found at the homes of club members. They would also provide advanced brooding practices for older members. You, as a poultry specialist, can readily appreciate the possibilities our subject matter has for the development of unit outlines to meet varying conditions. The material for use at meetings would supplement the unit outline. Such material should be prepared in outline form with suggestions on methods of presentation.

Such a program, that keeps in mind the broader objectives of 4-H club work and arranges the subject matter so as to present steps on the way to the development of the individual, will attract attention, create interest and promote action.

"Sending the Growing Pullets to Camp" is the heading used by D. D. Moyer on the June edition of suggestions to cooperators in the Missouri Farm Flock Record Keeping Project. The article describes a summer range shelter which can be built at low cost.

Dr. Graham of Illinois states in the 1936 Animal Pathology report that there is no known incubator fumigant so efficient as formaldehyde in forced-draft incubators for the suppression of S. pullorum. Formaldehyde possesses a superior efficiency in incubator disinfection and is inexpensive. As previously determined, the release of formaldehyde from cheese cloth in forced-draft incubators is more economical and just as efficient as the potassium permanganate method.

AUTOGENOUS VACCINATION IN OUTBREAKS OF INFECTIOUS LARYNGOTRACHEITIS

By

C. A. Brandly,

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College of Agriculture, University of Illinois.

In the development of the cloacal method of vaccination against infectious laryngotracheitis (Hudson and Beaudette, 1932) it was found that a significant immunity did not develop until 8-9 days following cloacal vaccination. Consequently, where outbreaks of the disease occur in certain flocks or units, vaccination must be carried out within 48 hours following the appearance of the first case if any value is to be derived. Surveys show that the heaviest losses occur in the field during the 11 days following the first case, with a rapid decline in mortality thereafter. To obviate crediting vaccination with reducing losses in outbreaks where vaccination may be requested later than the second day, a representative number of fowls may be left untreated as a check on mortality in the treated group.

To prepare the autogenous vaccine, typically affected living fowls or some very recently dead of infectious laryngotracheitis are employed as a source of virus. The tracheas are opened through their entire length, the exudate scraped out with a scalpel or scissors and this material ground well in a sterile mortar. Sterile water physiological salt solution or preferably 10 percent glycerin solution is added during trituration to form a thin paste. This constitutes the autogenous vaccine which, because of rapid loss of potency, should be used within 4 to 5 hours following preparation.

The vaccine is applied lightly to the cloacal mucosa by means of a small bristle brush or a cotton swab. The cloaca is exposed by everting the dorsal border of the anus. In younger fowl the entrance to the bursa of Fabricius and in older birds the cloacal fold are thus readily exposed and the vaccine is applied in or upon this area.

No precautions other than proper management and feeding are necessary in the after care. It should, nevertheless, be emphasized that flocks having suffered at attack of laryngotracheitis invariably harbor "carriers" for an indefinite period. Consequently, annual vaccination of all young stock on the premises preferably at 12-14 weeks of age, is necessary unless the Massachusetts plan (Gibbs, 1933) is followed. This program includes the marketing of all recovered or exposed birds in June or July or preferably earlier. Subsequent cleaning and disinfection render the premises safe for the young stock reared on clean ground and brought into the laying houses in the fall.

EGG MARKETING

In Illinois when H. H. Alp started to work on a "Production and Marketing of Quality Eggs" project he found many questions that the research workers could not answer. He set up a project on other than extension funds and secured data that helped to answer these questions. The work was carried on in southern Illinois. The eggs were marketed in New York City.

"Grade of Eggs on Date of Shipment Before and After Using Cooler. The cooler used was an inexpensive farm type consisting of a framework covered with burlap which is kept wet.

Shipper A

Date (1936)	U. S. Extras	Before	U. S. Standards	Date (1936)	U. S. Extras	After	U. S. Standards
	Percent		Percent		Percent		Percent
June 19	75		25	July 3	90		10
June 26	60		40	July 10	80		20

Shipper B

		Before				After	
June 19	65		35	July 10	75		25
June 26	40		60				
July 3	30		70				

"Temperature and Egg Quality. The effect of hot weather on egg quality has always been considered very detrimental. With weather conditions such as those which prevailed in the summer of 1936 it is interesting to see the weekly grades of eggs in relationship to the weekly mean temperature.

Period	Mean temperature °F.	Percent of U. S. Extras	
		Time of shipment	At market
Week ended:			
June 12, 1936	72.9	60.1	52.4
June 19, 1936	78.3	62.2	49.3
June 26, 1936	75.2	59.2	56.6
July 3, 1936	81.7	58.4	56.5
July 10, 1936	93.1	56.2	52.6

"Hens per Nest and Egg Quality. These figures, representing percentages, merely indicate that a poor management practice such as having only one nest to 10 or 15 hens is probably in keeping with other poor production practices on the same farms, and consequently the low-quality eggs result from the effect of the sum total of such conditions.

Hens per nest	Grades at shipping point			Grades at market		
	Extras	Standards	Trades	Extras	Standards	Trades
1 - 5	61.5	38.5	---	56.8	42.7	0.5
5 - 10	67.4	32.4	0.2	59.5	38.9	1.6
10 - 15	51.0	48.9	0.1	35.1	59.4	5.5
15 - up	36.1	62.2	1.7	14.4	83.3	2.2

"Production Practices and Egg Quality. On these particular farms, production practices in the main varied but little, consequently little measurement could be made on their effect on egg quality. The one practice which did seem to be typical of the farms producing the best eggs was the matter of range.

Type of Range and Egg Quality

Type of range	Grades at shipping point			Grades at market		
	Extras	Standards	Trades	Extras	Standards	Trades
Barnyard	52.8	47.0	0.2	44.9	52.2	3.0
Limited range or confinement	68.9	31.1	---	65.2	33.4	1.4

"Quality of Eggs as Shipped by Railroad and Motor Truck. These results indicate practically no difference between the two systems of transportation insofar as their effect on egg quality is concerned. In both instances the eggs were scheduled to be on the market on the third day after shipment.

Method of shipment	U. S. grades at shipping point			U. S. grades at market			Trem. air cells
	Extras	Standards	Trades	Extras	Standards	Trades	
Truck	72.5	27.5	---	67.1	32.1	0.8	9.9
Railroad	75.6	24.4	---	69.4	29.8	0.8	14.8

"Summary. The interest of farmers in egg marketing is closely related to size of flock. The larger the flock the greater is the interest. The 100-200 hen flock owner apparently prefers selling eggs simply on the count basis, without any particular reference to quality, to selling on grade.

"Fifty-two percent of the farms studied practiced selling their eggs to the local store, and only 28 percent to the produce house. This fact accounts for the slowness of these people to "warm up" to the idea of selling on grade. "It is too much trouble" is the reason given.

"The hot summer weather of southern Illinois is not a particular handicap to the production of quality eggs. During one week with a mean weekly temperature of 93.10 F. the entire shipment averaged 56.2 percent U. S. Extras, with individual shipper's eggs grading as high as 100 percent U. S. Extras. The fact that the eggs shipped in October, although amounting to only a small volume, were of lower quality than the eggs shipped by some shippers in June and July would also indicate that temperature alone is not the chief factor in destroying egg quality.

"Moisture in an egg room seems to be of equal importance to temperature. This fact was demonstrated several times throughout the project.

"The trucking of eggs over country roads for several hours had, apparently, no serious effect on egg quality except where they were not protected from heat and rough handling. Eggs collected from Wayne County did show some damage from hauling. This was discovered to be due to no truck cover over the eggs, thus no protection from the sun, and they were handled by two truck drivers."

--Illinois Annual Report, 1936.

MANUFACTURING WEATHER (FOR EGGS)

"We should do something about the weather. The weather which surrounds eggs, we mean. Assuming, of course, that we wish to get the ultimate cent out of our daily pick of eggs. The hen, through the foresight of nature, wraps a neat package around the yolk and white, and then lets the matter lay. The calcareous wrapper is full of very small holes which permit passage of the moisture which makes up about 60 percent of the contents... Water still is the cheapest ingredient in an egg. So it would seem to be ... good judgment to try to keep the water in the egg until delivery is made to the receiving station, then the matter is up to the next man.

"The job is easy. Provide a cool and relatively damp place to keep eggs until they are delivered. And deliver as often as possible. The ground floor of a tank house is a good place to keep eggs. Wet down the floor frequently. Don't overlook the basement as a storage place. On very warm days, a wet blanket may be placed over the cased eggs to advantage. This is the only good use we know for a wet blanket. By surrounding eggs with damp air there is much less opportunity for dry warm outside air to pull moisture from the eggs.

"Many poultrymen have found it to their advantage to build inexpensive "California" or burlap coolers. These are rigged up with a water tank on top, or with small pipes with small perforations (on the top-side of the pipes) over which burlap is hung in very much the same manner in which your wife hangs curtains on curtain rods. Water trickles down the burlap and as it evaporates cools and dampens the interior of the cooler....

"When a few eggs remain in a warm nest for several hours exposed to 100 degree air or 106 degree hens, they will lose moisture, and in losing moisture, they lose grade, and in losing grade they lose price. Gather them early and often, and keep them in a place which is cool and damp. Dampness is even more important than coolness when the temperature soars."

---D. M. Rutherford in Pacific Rural Press.

* * * * *

"With the development of programs for handling eggs on a quality basis came the adoption of the use of Federal grades of eggs by many of the marketing agencies within the State. The personnel of the State Department of Markets is responsible for the enforcement of the State and Federal egg grades and is very eager to cooperate in the development and execution of an educational program of the Extension Service on the production and marketing of quality eggs."

--- Ohio Annual Report, 1936.

Connecticut Six-Point Poultry Efficiency Program

This program was planned cooperatively by the poultry extension specialist, the farm management specialist and the county agents, who got together to work out means of improving the Home Egg-Laying Contest and popularizing poultry-farm accounts.

Poultry efficiency in this six-point program is measured in terms of labor income as shown by poultry farm management figures. Thirty-seven poultry farm management accounts kept during the year 1934 and summarized by Mr. Paul L. Putnam were used as a basis for these recommendations. These standards or requirements for possible operations, taken separately or collectively, show a very definite relation to labor income. The six-points and the established standards are given below.

Six-Point Poultry Efficiency Program

Practices and Standards Necessary for High Cash Return.

1. High egg production per hen, - - - - - (Hen days)- 170 eggs per bird.
(Hens housed)- 133 eggs per bird.
2. High egg production during
October and November, - - - - - (24 eggs per bird
(12 eggs per bird per month.
3. Low hen mortality, - - - - - Not more than 12 percent per year.
4. High annual sales relative to fixed
costs, - - - - - Sales 60 percent of total invest-
ment.
5. Efficient labor, - - - - - 1,200 hens per man wholesale and
800 retail and baby-chick farms
or \$5,000 sales per man, or \$5
per \$1 labor cost.
6. Volume and diversity of industry, - - - Gross sales \$7,000 or more, sales
other than eggs and poultry.

The second step in the Poultry Efficiency Program was to find a satisfactory and effective way of placing these six points and suitable evidence of their value before Connecticut poultrymen. Making these six points and the table supporting them a part of the Poultry Calendar Bulletin seemed to be the most logical procedure. This plan worked out very satisfactorily during 1935-36 and is being repeated in the Home Egg-Laying Contest now started covering the year 1936-37.

Publicity in connection with both the Home Egg-Laying Contest and the Six-Point Poultry Efficiency Program has been carried out through the County Farm Bureau organization. Subject matter material relative to these programs has been presented at county poultry meetings. Mr. Paul Putnam, farm management specialist, presented the figures on the Six-Point Poultry Efficiency Program at a series of county meetings in cooperation with the Extension Specialist. The Six-Point Poultry Efficiency Program was mentioned and some one phase of the program discussed at all following meetings held during the year.

Point 1, high egg production per bird, and point 2, high egg production during October and November, were discussed in detail at the October meeting. Point 3, low hen mortality, was discussed in detail along with the Grow Healthy Chicks Program at the January meeting, when Dr. Jungherr of the Animal Disease Laboratory cooperated in the discussion on poultry disease control. Point 4, high sales relative to fixed costs, and point 6, volume and diversity of interest, were taken up at the February meetings. Mr. Paul Putnam, farm management specialist, cooperated in handling this discussion. Point 5, labor efficiency, was handled at the March county meetings in a panel discussion. This discussion proved so popular that meetings were continued into April with very pleasing results.

The method used in handling the panel discussion was as follows: Four to six men, depending on the county, were chosen to sit in the panel and were supplied with a list of 25 questions before the meeting. These questions with spaces for notations on the sheets were distributed to the audience at the opening of the meeting. Pencils and pieces of cardboard to place under the sheets to assist in writing were also distributed. The Extension Poultryman acted as panel discussion leader. The questions were taken up in order and referred to members of the panel. In some cases all members of the panel were asked to express an opinion on the same question. If there was a difference of opinion, the reason for this difference and the varying conditions under which each might be right were thrashed out in discussion. At each of the first series of meetings it was possible to cover only half the questions presented. These meetings, with few exceptions, were continued in April, when the remainder of the questions were taken up.

The results of the Six-Point Poultry Efficiency Program and the manner in which it was presented can be best measured by the increased interest in farm accounts. There were 35, 1934 farm accounts, from which the Six-Point Poultry Efficiency Program was worked out. During 1935 there were 49 poultry farm summaries. For the present year, 1936, poultry farm summaries are not complete, but Mr. Putnam reports that there will probably be close to 100. At present something like 300 poultry farms are keeping records.

Two counties where intensive work on this program has been carried on each show something over 100 poultry farm accounts set up. Much of the increase in poultry farm accounts can be traced directly to the Six-Point Poultry Efficiency Program, cooperation with the Home Egg-Laying Contest and presentation through the county poultry committee meetings.

PANEL DISCUSSION QUESTIONS

1. What is efficiency on a poultry farm?
2. What are some of our best poultry efficiency measurements?
3. How many chicks can one man brood and rear if he has no other work to do?
4. What brooding system is most economical from the standpoint of overhead cost?
5. What brooding system is most economical from the standpoint of labor?
6. Which is most expensive -- labor or overhead costs?
7. Name 5 types of brooders from the fuel standpoint.
8. Which are most economical from the standpoint of labor? -- fuel? -- overhead cost?
9. What is your greatest labor-saving device for brooding and rearing? Other devices?
10. What type of range water system do you like best?
11. Which is best from the labor and cost standpoint -- closing houses each night, or fencing and letting chickens run free?
12. How do you cut the labor cost in feeding young stock on range?
13. How do you cut labor costs when vaccinating for chicken pox? When tattooing?
14. How and when is it most convenient to separate the cockerels and pullets?
15. What is the best roofing material on a summer shelter?
16. Should shelters be moved frequently?
17. How can we cut the labor cost when catching and housing pullets?
18. How many laying hens can one man care for if he does no other work?
19. What type of house construction makes labor most efficient when caring for layers?
20. What labor-saving equipment is most helpful?
21. How can we reduce the time required for feeding? Watering? Collecting eggs? Cleaning dropping boards? Cleaning houses?
22. How can we reduce the time required for cleaning and packing eggs?
23. Is an egg grader practical on the average poultry farm?
24. How can culling be done most easily and effectively?
25. Is it worth while to purchase labor-saving equipment for the purpose of saving labor only?

---Connecticut Annual Report, 1936.

* * * * *

Mr. Frank Moore, extension specialist in North Dakota, has assembled a very satisfactory survey sheet for farm flocks. It is used in connection with flock inspection work with the North Dakota Poultry Improvement Board but can be used to an advantage in other poultry surveys. A carbon copy of the report is always left with the farm flock owner. In evaluating the flock, Mr. Moore has allowed 20 points for management, 20 points for breeding, 25 points for housing, 15 points for feeding and 20 points for sanitation. Each major heading is divided into subdivisions and a designated number of points allotted for this practice. For example, under management, floor litter is given 2 points with spaces left to check such items as desirable, clean, ample, etc. Copies of this survey sheet may be obtained from Mr. Moore.

THE 1935-36 NEBRASKA FLOCK TESTING PROJECT.

Item	7 flocks, heavy breeds.	12 flocks, W. Leghorns
Fertility of eggs,* spring of 1935, percent	85.5	88.1
Hatchability of eggs, spring of 1935, percent . . .	68.6	76.1
Chicks lost the first four weeks, percent	29.3	14.4
Average number of pullets at five months	22.5	27.4
Average weight of pullets when housed October first, pounds,	4.7	3.5
Total number of pullets in entries at the beginning of project	123	173
Total number of pullets in entries at the finish of the project	77	88
Number of hens laying 200 eggs or more	10	22

*100 eggs from each flock; hatched at Lincoln; chicks brooded, reared,
and trap-nested at North Platte.

* * * * *

HINTS ON WRITING

P. D. Sanders spent several years with the Extension Service as a State and U. S. Department of Agriculture specialist. He is now editor of The Southern Planter, Richmond, Virginia. In a recent talk on "Presenting Agricultural Information to the Public" he states:

"It takes time and effort to prepare stuff with a punch, stuff that people will read, but I have found these suggestions helpful.

1. Limit yourself to a given number of words.
2. Outline the salient points of the subject.
3. Hook them together with short terse sentences. Be epigrammatic.
4. Write it in the first person. I came, I saw, I conquered.
5. Go over the manuscript and strike out half of your adjectives.
More as you grow stronger.
6. If there are any sentences or phrases that especially appeal to you, strike them out. They mean more to you than to your reader.
7. Where possible, use illustrative material. Your story in pictures leaves nothing untold.
8. And, finally, whatever you do, use simple language. Call a spade a "spade", and not an instrument of manual husbandry."

SUMMARY OF REPORTS ON DEMONSTRATION FARM FLOCKS
(As furnished by 26 States)

November 1, 1935 - October 31, 1936

State	Farms	Average size of flock	Eggs per hen	Mortality	Feed cost per hen	Total income per hen	Feed cost per doz. eggs	Selling price per doz. eggs
	Number	Number	Number	Percent	Dollars	Dollars	Cents	Cents
Ark.	71	104	148.4	---	---	---	---	20.8
Calif. x	29	755	161	25.6	2.03	3.76	---	24.5
Conn.*	100	528	170.6	12.2	---	---	---	---
Fla.*	49	451	180.2	17.1	---	---	---	---
Ill.	63	357	121	---	---	---	---	---
Ind.	300	252	147	17	1.43	---	11.7	24.4
Iowa	24	278	135.7	17	1.57	2.98	---	---
Kans.	788	161	142.9	---	---	---	---	---
Ky.	59	152	153.3	---	2.37	---	---	---
Maine	138	215	166	---	---	---	---	32
Md.	73	354	150.9	19.8	---	---	---	---
Minn.	79	233	160.2	---	---	---	---	---
Mo.								
(Farm flocks	512	149	136.7	---	1.69	3.00	14	20
(Com. flocks	43	546	138.3	---	1.64	2.80	14	21
Mont.	37	225	150.6	19	1.41	---	12	---
Nebr.	13	293	138.9	16.4***	2.00	3.87	---	23.6
N. H.	277	560	172	14	---	---	---	---
N. Mex.	24	143	138	26.7	1.97	3.55	17.1	18
N. C.	287	192	159	---	1.76	---	13.3	28.2
Ohio	98	268	149.6	24.3	1.45	3.89	16.3	25.1
					1.99**			
Okla.	151	131	138.7	---	1.22	---	---	21
S. C.*	68	175	146.3	21.4	2.04	4.21	16.7	27
Tenn.	58	74	117	---	1.83	---	---	---
Utah	123	628	158.6	30.5	---	---	---	---
Va.	22	85	140.6	15.4	1.66	3.94	14.1	26.4
W. Va.	30	101	184.1	10.9	1.74	---	12.0	26.1
Wis.	---	128	167	17.7	---	---	11.3	23.4

* October 1 to September 30.

** Includes cost of raising young stock.

*** Percent of original number.

x 3 counties.

EXTENSION WORK WITH TURKEYS

"Interest in better turkey marketing was stimulated this year through the organization of three cooperative marketing associations. Turkey dressing plants were established at Beloit, Hutchinson, Kinsley, and Emporia. These plants handled approximately 37,000 turkeys and shipped 21 carloads. The turkeys came from growers in over 50 counties- a larger number of growers would have participated if facilities for handling the dressed birds had been available.

"All turkeys were handled by Government licensed graders, 21.02 percent grading U. S. Prime and 58.86 percent U. S. Choice, 18.88 percent U. S. Commercial, 1.24 percent below grade.

"The birds were sold and plant operations financed by the Northwest Turkey Growers Association."

-- Kansas 1936 Annual Report.

Forty-two turkey demonstrators in McCulloch County, Texas, carried on complete demonstrations in selection, feeding, breeding, and egg production. These 42 demonstrators carried over from 1935 production 1603 bronze hens to be used for both commercial egg production and for the replacement of their breeding stock. These 1603 hens produced a total of 66,733 eggs or 41.6 eggs per hen. They consumed a total of 118,622 pounds of feed for an average of 74 pounds of feed per hen. The 42 growers realized a net profit of \$5,208.00 for the sale of turkey eggs and in addition to this raised for market 5,893 turkeys. The results were as follows:

No. of hens	1,603
Eggs sold	66,733
Average egg production per hen	
(percent)	41.6
Feed consumption per hen (pounds)	74
Mortality during laying period	
(percent)	4.7
Net profit per hen	\$3.26

Extent of Poultry Extension Work

The budget for the 1937 fiscal year of cooperative extension work in poultry was set up for 80 full-time poultry specialists and 7 part-time workers. The money set aside for this work amounted to \$231,819.77 from Federal sources, \$129,649.35 from States and totals \$361,469.12.

This did not include the county extension workers' budget. There were 2,827 counties reported doing work with poultry in 1936. These agents spent 4 percent of their time or 63,220 days on this subject.

EGG CONSUMPTION SURVEY

A very comprehensive survey of the egg market at Tampa, has recently been published by D. E. Timmons, marketing specialist, and D. F. Sowell, poultry specialist, Extension Service of the University of Florida. During the course of this study 1,235 housewives, 144 retail-store managers, 18 hotel and restaurant operators, and 13 wholesale dealers were contacted. An attempt was made to get a representative sample of high, medium, and low income groups, also to cover the Latin and negro population of the area. The total average consumption for 4,923 people was 322 eggs per year. This ranged from 341 in the high income group to 188 eggs in the negro group. The consumption for the 4 seasons did not vary greatly, even though the price of eggs fluctuated considerably.

Fifty-seven and two-tenths percent of the housewives obtained their eggs from retail stores, 20.6 percent from peddlers and poultrymen, 8.2 percent from their own flocks, with 14 percent from miscellaneous sources. In reply to the question, "Do you purchase classified eggs?", that is, graded eggs, 63 percent replied "Yes", 26 percent "No" and 11 percent gave no answer. Here again the high income group evidently knew more about grades of eggs, because 80 percent of them purchase classified eggs while only 30 percent of the Latin group and 46 percent of the negro group bought according to grades. The question covering weights of eggs was not very satisfactory because 55 percent of the people gave no reply. Evidently price is a more important factor in determining the size of eggs purchased. The study further indicates that only a small proportion of the consumers specified one quality of eggs for one purpose and another quality for another purpose. Neither did they select one quality during one season of the year and another quality at another season.

The questions covering the color of shell and color of the yolk brought to light some interesting data. Fifty and seven-tenths percent preferred brown shelled eggs, 34.6 white shelled and 14.7 had no preference; this in spite of the fact that wholesalers and retailers had a tendency to claim that Tampa was a white-egg-shell market and actually differentiated in price in favor of white shells. In considering color of yolk 15.5 percent showed a preference for a light colored yolk, 32.4 percent for a medium and 43.3 percent for a dark yolk, with 8.8 percent indicating no preference. The dark colored yolk preference was influenced quite strongly by the Latin and Negro classes because 70.4 percent of the Latin and 61.7 percent of the Negro class preferred dark yolks. The treatment of the eggs after they left the store showed that 90 percent of them kept the eggs in ice boxes or refrigerators after they were purchased. This differs from the data secured from the retail store managers, where 28 percent of the stores kept their eggs in refrigerators, 57 percent on open display and 15 percent kept them in the refrigerator part of the time and on the counter the remainder of the time.

Consumer studies of this type undoubtedly assist the poultry specialists in many ways in drawing up their production programs in the States.

SUMMARY CHICK BROODING RECORDS- 1936.

Reduced to basis of cost per 100 chicks:

Cost of chicks	\$9.76
Cost of feed -(763 lbs.)	14.23
Cost of fuel	1.60
Total	25.59
Credit for broiler sales	13.66
Net	11.93

Number of pullets on hand	46
Cost per pullet	29.11¢
Average age	12.4 weeks
Average mortality	12.35%

Average fuel consumption:

Coal	\$8.52
Oil	9.30
Electricity	8.80

Chick cost represented 38.2 percent of total cost					
Feed " " 55.6 " " " "					
Fuel " " 6.2 " " " "					
Broiler sales returned 55.1 percent " " "					

52 percent used a home-mixed ration.
 36 percent used a commercial ration.
 12 percent used a combination of home-mixed and commercial.

--University of Wisconsin,
 Poultry Department.

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COMMUNITY POULTRY SURVEY Fall, 1935, and Spring, 1936

County	No. comm.	No. flocks	No. hens	Eggs daily	H o u s e s				No. feeding mash
					O.K.	Crow- ed	Capa- city	Extra hens	
Benton	7	73	8,131	827	41	27	2,551	3,495	37
Stearns	24	235	28,397	3,838	112	104	10,053	5,062	82
Rice	9	69	10,983	2,134	22	40	3,993	2,719	52
Wabasha	7	76	9,512	4,963	44	23	2,384	1,206	54
	47	453	56,923	11,762	219	194	18,981	12,482	225

--Minnesota Annual Report, 1936.

POULTRY MANURE

"Considerable poultry manure produced during the winter and early spring months has to be disposed of either by storage or immediate application to the land. Some estimates of the roost droppings collected fresh each morning during the eight months' period November to June inclusive were obtained at the Massachusetts State College from six pens of 659 average total number of birds. Collections of night droppings obtained at monthly intervals from Rhode Island Reds averaged 19.5 pounds per 100 birds per night, or about 585 pounds per month of 30 days. The differences between monthly weights, however, were great, ranging from a low of 390 pounds for the month of December to a high of 830 pounds for the month of February, due principally, it is believed, to the relative activity and rate of egg laying of the birds. Leghorns produced less droppings, averaging 15 pounds per 100 birds per night or 450 pounds per month, with a low in November of 330 pounds against a high of 525 pounds for both January and February. The moisture content of the fresh manure averaged 73 percent for 30 samples obtained during this eight months' period with only slight fluctuation except during the warmer dry months of May and June when moisture dropped to about 64 percent.

"Other studies made at the college indicate that rate of voiding may be similar as between night and day."

-- Ralph Donaldson, extension agronomist,
Massachusetts State College.

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SHIPPING CAPONS WITH TURKEYS

Prior to the beginning of cooperative marketing of turkeys in 1931 the growing of capons in Tennessee was practically unheard of. In 1936 approximately 15,000 capons were shipped in the cars along with the turkeys. The farmers received from 21 to 25 cents per pound and report they are highly pleased with the returns. Where formerly cockerels were sold at relatively low prices they now caponize the birds and grow them out on home-grown grain in pasture supplemented with skim milk or buttermilk.

--Tennessee Annual Report, 1936